

WEST Search History

DATE: Thursday, July 10, 2003

Set Name Query

side by sid

Hit Count Set Name

result set

DB=PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES;
OP=OR

L6

(atm or (automatic\$ adj teller\$ adj machine\$) or (financ\$ with
transaction)) and (vicinity or adjacent or proximity) and camera and
@pd<=19971127

1

L6

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

L5

L4 and L1

4

L5

L4

((705/43)!CCLS.)

133

L4

L3

((L705/43)!CCLS.)

0

L3

L2

((705/37)!CCLS.)

335

L2

L1

(atm or (automatic\$ adj teller\$ adj machine\$) or (financ\$ with
transaction)) and (vicinity or adjacent or proximity) and camera and
@ad<=19971127

562

L1

END OF SEARCH HISTORY

L34 L32 not L33

17

L34

L33 L31 and L32

3

L33

L32

(atm or (automatic\$ adj teller\$ adj machine\$) and ((different or
multiple or many) adj2 (merchant\$ or bank\$ or retail\$) with access\$)
and @ad<=19971127

20

L32

L31

L30 and L27

23

L31

L30

((2\$ or two\$) with (ATM or (automatic adj teller adj machine))) and
((different or multiple or many) adj2 (merchant\$ or bank\$ or retail\$))
and @ad<=19971127

56

L30

L29

L28 and ((2\$ or two\$) with (ATM or (automatic adj teller adj
machine)))

23

L29

L28

L27 and L24

74

L28

1 of 3

7/11/03 2:04 F

L26 ((235/379|235/380|235/381)!CCLS.)

L26

L25 and L24

3164

L27

L25

((902/30)!CCLS.)

2

L26

L24

(atm or (automatic\$ adj teller\$ adj machine\$) and ((different or
multiple or many) adj2 (merchant\$ or bank\$ or retail\$)) and
@ad<=19971127

64

L25

232

L24

1 of 1

End of Result Set



Generate Collection

Print

A2

L6: Entry 1 of 1

File: TDBD

Sep 1, 1989

TDB-ACC-NO: NA8909113

DISCLOSURE TITLE: Manipulation Sensor

PUBLICATION-DATA:

IBM Technical Disclosure Bulletin, September 1989, US

VOLUME NUMBER: 32

ISSUE NUMBER: 4A

PAGE NUMBER: 113

PUBLICATION-DATE: September 1, 1989 (19890901)

CROSS REFERENCE: 0018-8689-32-4A-113

DISCLOSURE TEXT:

- The sensor described in this article detects manipulations on recording monitoring cameras, producing a signal that is electrically evaluated. - The optoelectronic sensor used for this purpose is installed adjacent to the front lens of a monitoring camera. If the objective is shaded by being covered or sprayed, an electrical signal is produced. The described sensor may be used, for example, in an automatic teller machine with a built-in monitoring camera which records transactions on the teller machine. If the recording objective is shaded, the electrical signal produced in response blocks any transactions of the teller machine, in particular cash transactions.

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Generate Collection

Print

L5: Entry 1 of 4

File: USPT

Mar 14, 2000

US-PAT-NO: 6038553

DOCUMENT-IDENTIFIER: US 6038553 A

TITLE: Self service method of and system for cashing checks

DATE-ISSUED: March 14, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|--------|-------|----------|---------|
| Hyde, Jr.; Thomas A. | Dallas | TX | | |

ASSIGNEE-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|------------------------------------|--------|-------|----------|---------|-----------|
| Affiliated Computer Services, Inc. | Dallas | TX | | | 02 |

APPL-NO: 08/ 933413 [PALM]

DATE FILED: September 19, 1997

INT-CL: [07] G06 F 17/60

US-CL-ISSUED: 705/45; 705/43, 235/379, 382/137, 382/138, 382/139, 382/140

US-CL-CURRENT: 705/45; 235/379, 382/137, 382/138, 382/139, 382/140, 705/43

FIELD-OF-SEARCH: 705/1, 705/30, 705/35, 705/40, 705/45, 705/39, 235/380, 235/379, 235/375, 236/379, 364/400, 902/3, 902/5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

| PAT-NO | ISSUE DATE | PATENTEE-NAME | US-CL |
|----------------------------------|---------------|-----------------|-----------|
| <input type="checkbox"/> 3588449 | June 1971 | Paterson | 235/61.7 |
| <input type="checkbox"/> 3705384 | December 1972 | Wahlberg | 340/149 |
| <input type="checkbox"/> 3784790 | January 1974 | Hatanaka et al. | 235/61.7 |
| <input type="checkbox"/> 3798603 | March 1974 | Wahlberg | 340/149 |
| <input type="checkbox"/> 3876864 | April 1975 | Clark et al. | 235/61.7B |
| <input type="checkbox"/> 3896266 | July 1975 | Waterbury | 179/1 |
| <input type="checkbox"/> 3943335 | March 1976 | Kinker et al. | 235/61.7 |
| <input type="checkbox"/> 4109238 | August 1978 | Creekmore | 340/149A |
| <input type="checkbox"/> 4317957 | March 1982 | Sendrow | 178/22.08 |
| <input type="checkbox"/> 4321672 | March 1982 | Braun et al. | 364/408 |
| <input type="checkbox"/> 4580040 | April 1986 | Granzow et al. | 235/379 |
| <input type="checkbox"/> 4617457 | October 1986 | Granzow et al. | 235/379 |
| <input type="checkbox"/> 4993068 | February 1991 | Piosenka et al. | 380/23 |
| <input type="checkbox"/> 5023782 | June 1991 | Lutz et al. | 364/405 |
| <input type="checkbox"/> 5220501 | June 1993 | Lawlor et al. | 364/408 |
| <input type="checkbox"/> 5265008 | November 1993 | Benton et al. | 364/408 |
| <input type="checkbox"/> 5367561 | November 1994 | Adler et al. | 379/93 |
| <input type="checkbox"/> 5386103 | January 1995 | DeBan et al. | 235/379 |
| <input type="checkbox"/> 5592377 | January 1997 | Lipkin | 395/242 |
| <input type="checkbox"/> 5751841 | May 1998 | Leong et al. | 382/137 |
| <input type="checkbox"/> 5751842 | May 1998 | Riach et al. | 382/137 |
| <input type="checkbox"/> 5832463 | November 1998 | Funk | 705/35 |
| <input type="checkbox"/> 5832464 | November 1998 | Houvener et al. | 705/45 |
| <input type="checkbox"/> 5890141 | March 1999 | Carney et al. | 705/45 |
| <input type="checkbox"/> 5897625 | April 1999 | Gustin et al. | 705/43 |
| <input type="checkbox"/> 5898155 | April 1999 | Imai et al. | 235/379 |
| <input type="checkbox"/> 5898157 | April 1999 | Mangili et al. | 235/380 |
| <input type="checkbox"/> 5925865 | July 1999 | Steger | 235/379 |
| <input type="checkbox"/> 5940811 | August 1999 | Norris | 705/38 |
| <input type="checkbox"/> 5940844 | August 1999 | Cahill et al. | 707/526 |

FOREIGN PATENT DOCUMENTS

| FOREIGN-PAT-NO | PUBN-DATE | COUNTRY | US-CL |
|----------------|---------------|---------|-------|
| 9835298 | February 1998 | WO | |

ART-UNIT: 275

PRIMARY-EXAMINER: Stamber, Eric W.

ASSISTANT-EXAMINER: Campa; John

ATTY-AGENT-FIRM: Hammond; Herbert J.

ABSTRACT:

An automated self service method of and system for cashing checks, typically without human intervention. The system includes a check cashing database that contains customer records for registered customers. A plurality of administration modules are provided with which individuals may register themselves and their checks and communicate with customer service representatives. A check cashing server communicates with the check cashing transaction modules. The check cashing server receives check cashing requests from the check cashing transaction modules. The check cashing server processes check requests by comparing information in the request with criteria derived from the check cashing database. If the check request satisfies the criteria, the check cashing server, without human action or intervention, instructs the check cashing transaction module to dispense cash to the customer.

24 Claims, 11 Drawing figures



Generate Collection

Print

L5: Entry 1 of 4

File: USPT

Mar 14, 2000

DOCUMENT-IDENTIFIER: US 6038553 A

TITLE: Self service method of and system for cashing checks

Application Filing Date (1):
19970919

Brief Summary Text (12):

The system includes a plurality of administration modules with which individuals may register themselves and their checks and communicate with customer service representatives. Preferably, the administration modules are implemented in free standing administration terminals. Each administration module includes a display for displaying information and prompts to a user, and user input devices, including a keypad and/or touch screen and a digital scanner, for receiving information from the user. Each administration module also includes a video or digital camera for capturing an image of the user and for use in video call switching. A telephone is provided for enabling the user to speak to a customer service representative. A printer is provided for printing registration forms, check cashing member identification number information, transaction records, and the like.

Brief Summary Text (14):

The system includes a plurality of check cashing transaction modules with which registered customers may cash registered checks. The check cashing transaction modules are preferably implemented in free standing check cashing modules separate from the administration modules. Each check cashing transaction module includes a display for displaying information and prompts to a customer, and user input devices, including a keypad and/or touch screen, for receiving information from the customer. Each check cashing transaction module also includes a video or digital camera for capturing an image of the customer. The check cashing transaction module includes a check receiver that holds the check during processing. The check receiver includes a check scanner and a MICR reader. The check cashing transaction module includes optical character recognition (OCR) software. The check cashing transaction module includes a cash and coin dispenser. A printer is provided for transaction receipts and the like.

Detailed Description Text (6):

The system includes a plurality of transaction modules. Transaction modules are preferably implemented in transaction terminals 23 of the type illustrated with respect to FIG. 3. Preferably, transaction modules 23 are implemented in terminals that are separate from the terminals of administration modules 13, although both could be implemented in the same physical piece of equipment. Typically, the terminal of administration terminals 13 and transaction terminals 23 would be located near each other, but physical proximity is not required, and the number of transaction terminals 23 supported by system 11 does not need to be the same as the number of administration terminals 13.

Detailed Description Text (7):

As will be described in detail hereinafter, the actual check cashing transactions according to the present invention are performed through transaction modules 23. Transaction modules 23 communicate with check cashing server 19. In the preferred embodiment, transaction modules 23 are implemented in modified automatic teller machines (ATMs) and in an architecture of the type described in copending application Ser. No. 08/934,446, filed Sep. 19, 1997. In the preferred embodiment, image data is communicated from each transaction module 23 directly to check cashing server 19 directly through FTP interfaces and character data is communicated back and forth between transaction modules 23 and transaction server 19 via frame relay

connections through a network system 25.

Detailed Description Text (10):

Referring now to FIG. 2, there is shown a block diagram of a administration module 13 according to the present invention. Administration module 13 includes a microprocessor controller 29 that runs a suitable operating system and appropriate device drivers, as well as administration software that will be described in detail hereinafter. The user interface to administration module 29 includes a touch screen display 31 and a keypad 33. In the manner well known to those skilled in the art, menus and selection choices are presented to the user on display screen 31 and user inputs selections and other data are received by controller 29 by touch screen and/or keypad entry. Administration module 13 includes a video or digital camera 35 for capturing an image of a customer using administration module 13. A telephone 37 is provided for enabling a customer to have a fully interactive voice and video conversation with a customer service representative.

Detailed Description Text (12):

Referring now to FIG. 3, there is shown a transaction module 23. Transaction module 23 is similar to administration module 13 in that it includes a microprocessor controller 43, a touch screen display 45, a keypad 47, a video or digital camera 49, and a printer 51. Additionally, transaction module 23 includes a check receptacle that includes a combination OCR capable check scanner/MICR 53. The check receptacle is adapted to hold the check during the transaction and to scan and perform OCR on both sides of the check and read the MICR line of the check. If the check is cashed during the transaction, the check receptacle deposits the check into a vault (not shown). If the check is not cashed, the check receptacle returns the check to the customer. If the check is cashed, transaction module 23 dispenses the amount of the check, less a service charge, to the customer with the cash/coin dispenser 55. Transaction module 23 prints receipts and other transaction records with printer 51.

Current US Cross Reference Classification (6):

705/43



Generate Collection

Print

L5: Entry 2 of 4

File: USPT

Jan 4, 2000

US-PAT-NO: 6012048

DOCUMENT-IDENTIFIER: US 6012048 A

TITLE: Automated banking system for dispensing money orders, wire transfer and bill payment

DATE-ISSUED: January 4, 2000

INVENTOR-INFORMATION:

NAME

Gustin; Robin Haley

Livingston; Troy W.

Park; Namsoo

CITY

Chicago

Northbrook

Schaumburg

STATE

IL

IL

IL

ZIP CODE

COUNTRY

ASSIGNEE-INFORMATION:

NAME

Capital Security Systems, Inc.

CITY

Chicago IL

STATE ZIP CODE

COUNTRY TYPE CODE

02

APPL-NO: 08/ 866140 [PALM]

DATE FILED: May 30, 1997

INT-CL: [06] G06E 17/60

US-CL-ISSUED: 705/39; 109/24.1, 235/379, 705/43, 705/44

US-CL-CURRENT: 705/39; 109/24.1, 235/379, 705/43, 705/44

FIELD-OF-SEARCH: 705/30, 705/33, 705/34, 705/35, 705/39, 705/40, 705/41, 705/42, 705/43, 705/45, 235/379, 235/380, 382/112, 382/119, 382/135, 382/137, 382/138, 382/139, 382/140, 109/24.1, 194/206, 379/93.12

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

| PAT-NO | ISSUE-DATE | PATENTEE-NAME | US-CL |
|----------------------------------|---------------|----------------|----------|
| <input type="checkbox"/> 3648020 | March 1972 | Tateisi et al. | 705/43 |
| <input type="checkbox"/> 3943335 | March 1976 | Kinker et al. | 235/379 |
| <input type="checkbox"/> 4023013 | May 1977 | Kinker | 235/379 |
| <input type="checkbox"/> 4085687 | April 1978 | Beck et al. | 109/24.1 |
| <input type="checkbox"/> 4134537 | January 1979 | Glaser et al. | 235/379 |
| <input type="checkbox"/> 4179723 | December 1979 | Spencer | 361/687 |
| <input type="checkbox"/> 4430562 | February 1984 | Lundblad | 235/379 |
| <input type="checkbox"/> 4434359 | February 1984 | Watanabe | 235/379 |

| | | | | |
|--------------------------|---------|---------------|------------------|------------|
| <input type="checkbox"/> | 4497261 | Febru 1985 | Ferris et al. | 109/2 |
| <input type="checkbox"/> | 4516015 | May 1985 | Uchida et al. | 235/379 |
| <input type="checkbox"/> | 4585928 | April 1986 | Watanabe | 235/379 |
| <input type="checkbox"/> | 4600828 | July 1986 | Nogami et al. | 235/379 |
| <input type="checkbox"/> | 4617457 | October 1986 | Granzow et al. | 235/379 |
| <input type="checkbox"/> | 4628532 | December 1986 | Stone et al. | 382/197 |
| <input type="checkbox"/> | 4634845 | January 1987 | Hale et al. | 235/380 |
| <input type="checkbox"/> | 4649832 | March 1987 | Hain et al. | 109/24.1 |
| <input type="checkbox"/> | 4680728 | July 1987 | Davis, II et al. | 345/141 |
| <input type="checkbox"/> | 4689478 | August 1987 | Hale et al. | 235/380 |
| <input type="checkbox"/> | 4701747 | October 1987 | Isherwood et al. | 341/24 |
| <input type="checkbox"/> | 4719338 | January 1988 | Avery et al. | 235/380 |
| <input type="checkbox"/> | 4729128 | March 1988 | Grimes et al. | 382/116 |
| <input type="checkbox"/> | 4733765 | March 1988 | Watanabe | 194/206 |
| <input type="checkbox"/> | 4743743 | May 1988 | Fukatsu | 235/379 |
| <input type="checkbox"/> | 4754126 | June 1988 | Caldwell | 235/379 |
| <input type="checkbox"/> | 4926173 | May 1990 | Frielink | 341/22 |
| <input type="checkbox"/> | 4936564 | June 1990 | Hain | 271/3.19 |
| <input type="checkbox"/> | 4989520 | February 1991 | Hain | 109/24.1 |
| <input type="checkbox"/> | 4997176 | March 1991 | Hain | 271/180 |
| <input type="checkbox"/> | 5013896 | May 1991 | Ono et al. | 235/381 |
| <input type="checkbox"/> | 5018720 | May 1991 | Whittaker | 271/272 |
| <input type="checkbox"/> | 5099423 | March 1992 | Graef et al. | 705/30 |
| <input type="checkbox"/> | 5136144 | August 1992 | Swinton et al. | 235/379 |
| <input type="checkbox"/> | 5233547 | August 1993 | Kapp et al. | 364/705.02 |
| <input type="checkbox"/> | 5238143 | August 1993 | Crichton | 221/7 |
| <input type="checkbox"/> | 5271613 | December 1993 | Hain | 271/3.12 |
| <input type="checkbox"/> | 5297030 | March 1994 | Vassigh et al. | 705/25 |
| <input type="checkbox"/> | 5335484 | August 1994 | Hain | 53/582 |
| <input type="checkbox"/> | 5386104 | January 1995 | Sime | 235/379 |
| <input type="checkbox"/> | 5389773 | February 1995 | Coutts et al. | 705/43 |
| <input type="checkbox"/> | 5408417 | April 1995 | Wilder | 705/5 |
| <input type="checkbox"/> | 5412189 | May 1995 | Cragun | 235/379 |
| <input type="checkbox"/> | 5428684 | June 1995 | Akiyama et al. | 380/25 |
| <input type="checkbox"/> | 5459957 | October 1995 | Winer | 42/70.11 |
| <input type="checkbox"/> | 5465206 | November 1995 | Hilt et al. | 705/40 |
| <input type="checkbox"/> | 5546523 | August 1996 | Gatto | 345/352 |
| <input type="checkbox"/> | 5650604 | July 1997 | Marcous et al. | 235/379 |

| | | | | |
|--------------------------|---------|---------------|--------------|---------|
| <input type="checkbox"/> | 5686713 | November 1997 | Rivera | 235/380 |
| <input type="checkbox"/> | 5751842 | May 1998 | Riach et al. | 382/137 |

OTHER PUBLICATIONS

"Once-Reserved Fed Leads the Charge for Change", Checks and Checking, Bank Technology News, pp. 14-15, Apr. 1996.
 R. Weatherington, "EBT Exploding, But Savings May be Myth," Checklist, pp. 12, 14, 16, Winter 1996.
 M. Robertson, "Stem the Tide of Internal Theft," Checklist, pp. 24, 26, Spring 1996.
 H. Shyne, "ATM Surcharges Target of Controlling Acts, " Checklist, p. 32, Summer 1996.
 "New ATM Fees Have Spread Fast," Money, p. 56, Dec. 1996.
 J. Schmeltzer, "Currency Exchanges Move Into New Territory," Sec. 5, Chicago Tribune, Dec.15, 1996.
 "More ATMs Levy Fees on Customers From Other Banks," Wall Street Journal, Section B, p. 11B, Oct. 4, 1996.
 Iversen, W.R., "How ATMs Fit Into An On-Line World", Financial Service On-Line, p. 39-48, Sep./Oct. 1996.

ART-UNIT: 271

PRIMARY-EXAMINER: Tkacs; Stephen R.

ATTY-AGENT-FIRM: Fletcher, Even, Tabin & Flannery

ABSTRACT:

An automated banking system for wire transfer of funds is provided with a machine where the user has a card to identify the user as being qualified to use the banking system. The user must know and be provided with the transferee's bank number and the transferee's account number. Preferably, the user knows the routing number and the user inputs the routing number at the machine which is preferably an ATM machine that accepts and dispenses cash. The user may pay for the wire transfer at the machine by cash, a credit card, debit card, smart card or a withdrawal from the user's account. The machine has card readers and means for writing down on a card the amount paid therefrom for this wire transaction. The user is assured by the verification that the wire transfer is to the proper receiving account.

19 Claims, 88 Drawing figures

WEST Search History

DATE: Thursday, July 10, 2003

Set Name Query

side by side

Hit Count Set Name

result set

DB=PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES;
OP=OR

L8

(atm or (automatic\$ adj teller\$ adj machine)) and ((different or
multiple or many) adj2 (merchant\$ or bank\$ or retail\$)) and
@pd<=19971127

11

L8

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

L7

L6 and L2

71

L7

L6

(atm or (automatic\$ adj teller\$ adj machine)) and ((different or
multiple or many) adj2 (merchant\$ or bank\$ or retail\$)) and
@ad<=19971127

232

L6

L5

L2 and ((different or multiple or many) adj2 (merchant\$ or bank\$ or
retail\$))

233

L5

L4

L3 and ((different or multiple or many) adj2 (merchant\$ or bank\$ or
retail\$))

71

L4

L3

L2 and L1

394

L3

L2

((235/379 | 235/380) ! CCLS.)

2805

L2

L1

(atm or (automatic\$ adj teller\$ adj machine)) and (merchant or bank
or retail) and @ad<=19971127

2544

L1

END OF SEARCH HISTORY

| Terms | Documents |
|---|-----------|
| (atm or (automatic\$ adj teller\$ adj machine)) and ((different or multiple or many) adj2 (merchant\$ or bank\$ or retail\$)) and @pd<=19971127 | 11 |

Display Format:

[Previous Page](#)

[Next Page](#)

Generate Collection

Print

Search Results - Record(s) 11 through 11 of 11 returned.

☐ 11. Document ID: EP 510798 A2 DE 69204202 E EP 510798 A3 EP 510798 B1 US
5330316 A

L8: Entry 11 of 11

File: DWPI

Oct 28, 1992

DERWENT-ACC-NO: 1992-359008

DERWENT-WEEK: 199244

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reviewed
TITLE: Sheet handle for bank statement in ATM - uses feeder to stack individual statement sheets and then air of endless belts to move stack to deliver stack to exit

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|-----------|----------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Draw Desc | Clip Img | Image | | | | | | | |

RWC

Generate Collection

Print

| Terms | Documents |
|---|-----------|
| (atm or (automatic\$ adj teller\$ adj machine)) and ((different or multiple or many) adj2 (merchant\$ or bank\$ or retail\$)) and @pd<=19971127 | 11 |

Display Format: -

Change Format

[Previous Page](#)[Next Page](#)

CLASS 382 IMAGE ANALYSIS

100 APPLICATIONS

- 101 . Mail processing
- 102 . . ZIP code
- 103 . Target tracking or detecting
- 104 . Vehicle or traffic control (e.g., auto, bus, or
 train)
- 105 . . License plate
- 106 . Range or distance measuring
- 107 . Motion or velocity measuring
- 108 . Surface texture or roughness measuring
- 109 . Seismic or geological sample measuring
- 110 . Animal, plant, or food inspection
- 111 . Textiles or clothing
- 112 . Document or print quality inspection (e.g.,
 newspaper, photographs, etc.)
- 113 . Reading maps, graphs, drawings, or schematics
- 114 . Reading aids for the visually impaired
- 115 . Personnel identification (e.g., biometrics)
- 116 . . Using a combination of features (e.g., signature
 and fingerprint)
- 117 . . Using a characteristic of the eye
- 118 . . Using a facial characteristic
- 119 . . Using a signature
- 120 . . . Sensing pressure together with speed or
 acceleration
- 121 . . . Sensing pressure only
- 122 . . . Sensing speed or acceleration only
- 123 . . . Sensing geometrical properties
- 124 . . Using a fingerprint
- 125 . . . Extracting minutia such as ridge endings and
 bifurcations
- 126 . . . With a guiding mechanism for positioning finger
- 127 . . . With a prism
- 128 . Biomedical applications
- 129 . . DNA or RNA pattern reading
- 130 . . Producing difference image (e.g., angiography)
- 131 . . Tomography (e.g., CAT scanner)
- 132 . . X-ray film analysis (e.g., radiography)
- 133 . . Cell analysis, classification, or counting
- 134 . . . Blood cells
- 135 . Reading paper currency
- 136 . Reading coins
- 137 . Reading bank checks (e.g., documents bearing E-
 13B type characters)
- 138 . . Reading monetary amount
- 139 . . Reading MICR data

140 . . . Including a optical imager or reader
141 . Manufacturing or product inspection
142 . . Bottle inspection
143 . . Inspection of packaged consumer goods
144 . . Mask inspection (e.g., semiconductor
photomask)
145 . . Inspection of semiconductor device or printed
circuit board
146 . . . Measuring external leads
147 . . . Inspecting printed circuit boards
148 . . . At plural magnifications or resolutions
149 . . . Fault or defect detection
150 Faulty soldering
151 . . . Alignment, registration, or position
determination
152 . . Tool, workpiece, or mechanical component
inspection
153 . Robotics
154 . 3-D or stereo imaging analysis
155 **LEARNING SYSTEMS**
156 . Neural networks
157 . . Network learning techniques (e.g., back
propagation)
158 . . Network structures
159 . Trainable classifiers or pattern recognizers (e.g.,
adaline, perceptron)
160 . . Generating a standard by statistical analysis
161 . . Alphanumerics
162 **COLOR IMAGE PROCESSING**
163 . Drop-out color in image (i.e., color to be
removed)
164 . Image segmentation using color
165 . Pattern recognition or classification using color
166 . Compression of color images
167 . Color correction
168 **HISTOGRAM PROCESSING**
169 . With a gray-level transformation (e.g., uniform
density transformation)
170 . With pattern recognition or classification
171 . For segmenting an image
172 . For setting a threshold
173 **IMAGE SEGMENTATION**
174 . Using projections (i.e., shadow or profile of
characters)
175 . Separating document regions using preprinted
guides or markings
176 . Distinguishing text from other regions
177 . Segmenting individual characters or words
178 . . Separating touching or overlapping characters
179 . . Segmenting hand-printed characters
180 . Region labeling (e.g., page description language)

181 **PATTERN RECOGNITION**

- 182 . Limited to specially coded, human-readable characters
- 183 . . Characters formed entirely of parallel bars (e.g., CMC-7)
- 184 . . With separate timing or alignment marks
- 185 . Ideographic characters (e.g., Japanese or Chinese)
- 186 . Unconstrained handwriting (e.g., cursive)
- 187 . On-line recognition of handwritten characters
- 188 . . Writing on ordinary surface (i.e., electronics are in pen)
- 189 . . With a display
- 190 . Feature extraction
- 191 . . Multispectral features (e.g., frequency, phase)
- 192 . . Feature counting
- 193 . . . Counting intersections of scanning lines with pattern
- 194 . . . Counting individual pixels or pixel patterns
- 195 . . Local or regional features
- 196 . . . Slice codes
- 197 . . . Directional codes and vectors (e.g., Freeman chains, compasslike codes)
- 198 Extracted from alphanumeric characters
- 199 . . . Pattern boundary and edge measurements
- 200 Measurements made on alphanumeric characters
- 201 . . . Point features (e.g., spatial coordinate descriptors)
- 202 . . . Linear stroke analysis (e.g., limited to straight lines)
- 203 . . . Shape and form analysis
- 204 Topological properties (e.g., number of holes in a pattern, connectivity, etc.)
- 205 . . . Local neighborhood operations (e.g., 3x3 kernel, window, or matrix operator)
- 206 . . Global features (e.g., measurements on image as a whole, such as area, projections, etc.)
- 207 . . Waveform analysis
- 208 . . . With a tapped delay line
- 209 . Template matching (e.g., specific devices that determine the best match)
- 210 . . Spatial filtering (e.g., holography)
- 211 . . . With electrically controlled light modulator or filter
- 212 . . Nonholographic optical mask or transparency
- 213 . . . Using both positive and negative masks or transparencies
- 214 . . . With a display
- 215 . . Using dynamic programming or elastic templates (e.g., warping)
- 216 . . At multiple image orientations or positions
- 217 . . Electronic template

- 218 . . . Comparator
- 219 Determining both similarities and differences
- 220 Calculating weighted similarity or difference
(e.g., don't-care areas)
- 221 Counting difference pixels
- 222 Using an Exclusive-OR gate
- 223 . . . Resistor matrix
- 224 . Classification
- 225 . . Cluster analysis
- 226 . . Sequential decision process (e.g., decision tree
structure)
- 227 . . . With a multilevel classifier
- 228 . . Statistical decision process
- 229 . Context analysis or word recognition (e.g.,
character string)
- 230 . . Trigrams or digrams
- 231 . . Checking spelling for recognition
- 232 **IMAGE COMPRESSION OR CODING**
- 233 . Including details of decompression
- 234 . Parallel coding architecture
- 235 . Substantial processing of image in compressed
form
- 236 . Interframe coding (e.g., difference or motion
detection)
- 237 . Gray level to binary coding
- 238 . Predictive coding
- 239 . Adaptive coding (i.e., changes based upon
history, activity, busyness, etc.)
- 240 . Pyramid, hierarchy, or tree structure
- 241 . Polygonal approximation
- 242 . Contour or chain coding (e.g., Bezier)
- 243 . Shape, icon, or feature-based compression
- 244 . Lossless compression
- 245 . . Run-length coding
- 246 . . Huffman or variable-length coding
- 247 . . Arithmetic coding
- 248 . Transform coding
- 249 . . Fractal
- 250 . . Discrete cosine or sine transform
- 251 . Quantization
- 252 . . Error diffusion or dispersion
- 253 . . Vector quantization
- 254 **IMAGE ENHANCEMENT OR RESTORATION**
- 255 . Focus measuring or adjusting (e.g., deblurring)
- 256 . Object boundary expansion or contraction
- 257 . . Dilation or erosion (e.g., opening or closing)
- 258 . . Line thinning or thickening
- 259 . . . Skeletonizing
- 260 . Image filter
- 261 . . Adaptive filter
- 262 . . Median filter